



## NAVAL MEDICAL RESEARCH UNIT DAYTON, OHIO



# Science Update

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### NAMRU-D MISSION:

To maximize warfighter performance and survivability through premier aeromedical and environmental health research-delivering solutions to the field, the Fleet, and for the future.

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## NAMRU-Dayton BRAC Nears Completion With Historic Ribbon Cutting



From left: Col John Drolet, Mr. Dan France, Maj Gen William McCasland (center), Mr. Thomas Wells and Mr. Dan Walsh participate in the Major General Harry G. Armstrong Complex ribbon cutting ceremony.

By George Lemmer &  
Nicholas Webber

On 1 June 2011 a commemorative ribbon cutting ceremony was held honoring the grand opening of the 711<sup>th</sup> Human Performance Wing (HPW) at Wright-Patterson Air Force Base, OH, culminating a successful \$239 million Base Realignment and Closure (BRAC) project. This multi-building, 680,000 sq. ft complex includes the Air Force School of Aerospace Medicine, the Human Effectiveness Directorate, the Air Force Research Laboratory 711<sup>th</sup> Human Performance Wing, the Human Performance Integration Directorate, and the Navy's newest research facility, Naval Medical Research Unit Dayton (NAMRU-Dayton). The construction teams

and military personnel combined to finish the project 89 days ahead of schedule and \$54 million under budget. The complex was named the Major General Harry G. Armstrong Complex after the late Air Force General who helped engineer many of the firsts in aviation safety, including the pressurized cockpit. The state-of-the-science complex will allow Navy and Air Force researchers to continue to innovate and create a safer, more efficient environment for the men and women of the armed forces in the spirit of Major General Harry G. Armstrong.

The official party for the ribbon cutting ceremony included Major General William McCasland, Commander Air

Force Research Laboratory, and Presiding Officer, Colonel John Frolet, Army Corps of Engineers, as well as, Mr. Dan Walsh, CEO Walsh Group, and Mr. Thomas Wells, Director, 711<sup>th</sup> Human Performance Wing. The distinguished guests representing the Navy included Rear Admiral Bruce A. Doll, Medical Advisor NATO Headquarters, and CAPT Richard L. Haberberger, Commanding Officer, Naval Medical Research Center. Other distinguished visitors included Mrs. Austria for Congressman Steve Austria of Ohio's 7<sup>th</sup> District, Fairborn's Mayor Mrs. Joan L. Dautel, Riverside's Mayor Mr. Bill Flaute, and several members of the late General Armstrong's family. (Continued on page 3)

## NAMRU-D Plays Major Role in 2011 Toxicology and Risk Assessment Conference



Left to right: Dr. Karen Mumy, LT Pedro Ortiz, Dr. Wayman Cheatham, Dr. Michael Gargas, Dr. Lisa Sweeney, Dr. Andrew Osterburg, and CDR Dan Hardt. Members of NAMRU-D Environmental Health Effects Directorate with Dr. Wayman Cheatham of the Navy Bureau of Medicine and Surgery.

By Dr. Karen L. Mumy

The 2011 Toxicology and Risk Assessment Conference (TRAC) was held in Cincinnati, Ohio 25-28 April. This year's meeting brought together scientists across various branches of the government, including the Navy, Air Force, Army, Environmental Protection Agency (EPA), National Institute for Occupational Safety and Health (NIOSH), Agency for Toxic Substances and Disease Registry (ATSDR), and the Federal Drug Administration (FDA), in addition to non-profit groups and universities. The conference focused on new hazards and methodologies in risk assessment and concentrated on homeland security issues, reproductive and developmental toxicology in the military, new ordnance compounds, open burning, nanomaterials, and utilizing cellular-based methods for exposure assess-

ment and evaluating unique compounds.

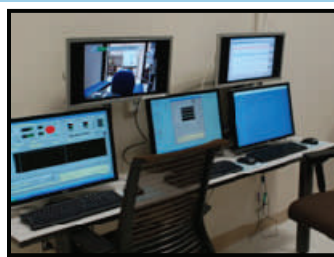
The Naval Medical Research Unit-Dayton (NAMRU-D) Environmental Health Effects Directorate actively participated in the meeting by organizing, chairing, and presenting in a variety of sessions. CDR Dan Hardt presented a health risk assessment of military burn pit emissions in a session that focused on open burning, co-chaired by LT Pedro Ortiz. Dr. Karen Mumy coordinated a separate session that focused the development of alternative exposure and toxicological methods, in which she also spoke regarding the use of cellular models to evaluate military fuels. Dr. Palur Gunasekar also co-chaired a session which focused on toxicity evaluation of new ordnance compounds.

One of the highlights of the meeting was the session entitled "Reproductive

and Developmental Toxicology: Relevance to the Armed Forces", which paid particular attention to the unique materials to which the men and women of our Armed Forces may be exposed. This session was organized and chaired by Dr. Michael Gargas; Director of NAMRU-D's Environmental Health Effects Directorate and was co-chaired by Dr. Wayman Cheatham, Special Assistant to the Surgeon General of the Navy for Medical Research and Director of Navy Medicine Research and Development Center at the Navy Bureau of Medicine and Surgery. During the session, Dr. Lisa Sweeney presented how physiologically-based pharmacokinetic models can be used to evaluate reproductive and development toxicants, and Dr. Michael Gargas spoke on the subject of assessing the reproductive and developmental risks associated with submarine atmospheres. Overall, 2011 TRAC was an excellent platform for NAMRU-D to highlight its current and future research paths, and network with toxicologists from other branches of the government in an on-going effort to protect military personnel.



Dr. Wayman Cheatham (left) and Dr. Michael Gargas (right) conferring prior to the Reproductive and Developmental Toxicology session.



Lab spaces were on display for guests to tour after the Ribbon Cutting Ceremony. Left: Hypoxia Lab with views of the booth and the monitoring station (center). Right: Aviation Human Factors and Selection Lab



## NAMRU-D Lab Spaces on Display



## NAMRU-D Participates on Submariner Health Panel

By Dr. Michael L. Gargas

The U.S. Navy monitors over 200 atmospheric contaminants found in nuclear submarines. The existing air exposure standards for these chemicals were set to protect the health of male submariners, as they have been the sole manning source for submarines since their inception. In early 2010, Congress announced that women will be allowed to serve on-board nuclear submarines beginning in November 2011. To assure the safety of our mixed-gender submarine crews, the Navy has embarked on a review of all air standards aboard submarines and is committed to establishing provisional standards, if found appropriate, as well as filling toxicity data gaps where they might exist. Dr. Wayne Horn, Medical Director of the Naval Submarine Medical Research Laboratory, established an expert panel for developing provisional exposure limits for mixed-gender submarine crews. The final panel consisted of Dr. Robert Chapin, Pfizer Global Research and Development, CDR Gail Chapman, Military Infectious Disease Research Program, Dr. Willem Faber, private consultant, Dr. Michael Gargas, Naval Medical Research Unit (NAMRU-D), Dr. Barry McIntyre, National Environmental Health Sciences, Dr. Anthony Scialli, Tetra Tech Sciences, and Dr. Lisa Sweeney, NAMRU-D. The expert panel conducted several meetings over the



(June 8, 2011)  
A Sailor throws a heaving line to the line handlers aboard the Ohio-class guided-missile submarine USS Michigan (SSGN 727) as it arrives at Naval Magazine Indian Island, Michigan, based at Naval Base Kitsap-Bangor.

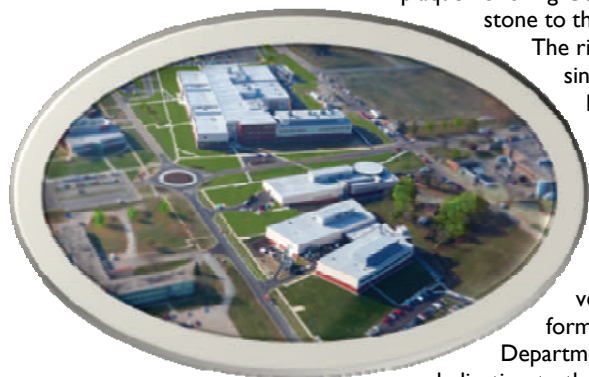
(U.S. Navy photo by Lt. Ed Early/Released)

last nine months with the goal of paring the list of over 200 chemicals down to the most relevant for in-depth review with about 30 chemicals making the final list. Each panel member was assigned one or more chemicals and an extensive literature evaluation of each chemical was conducted regarding potential reproductive and developmental effects, as well as any gender-specific effects. Recommendations were made by each panel member as to whether: 1) the existing continuous exposure limit (CEL) was protective as established; 2) a change in the existing CEL was needed and a provisional standard was proposed; or 3) existing data were inadequate to evaluate reproductive and developmental effects. A meeting of a majority

of the panel members was held in Kings Bay, Georgia on 31 May to 1 June 2011 to discuss each of the recommendations and to reach consensus on the overall panel recommendations for submittal to the fleet. The panel did reach consensus on a majority of the chemicals, with just a few minor outstanding issues to be resolved prior to finalization. During the visit to Kings Bay, a tour of a nuclear guided missile submarine was arranged for the panel members that proved useful in putting the conditions aboard a nuclear submarine into perspective when considering provisional exposure standards. The recommendations of the panel are expected to be submitted to the fleet in the next few weeks.

## Ribbon Cutting (continued from page 1)

A plaque honoring General Armstrong's accomplishments was presented and placed as a cornerstone to the entire complex.



The ribbon cutting event marked the end of the largest BRAC effort at WPAFB since World War II. As part of the BRAC mandate to align Navy and Air Force aeromedical research, education, and training, the Naval Aeromedical Research Laboratory in Pensacola (NAMRL) was directed to collocate with the 711<sup>th</sup> HPW on WPAFB. In an effort to further enhance manpower cost savings, NAMRL was merged with the Environmental Health Effects Laboratory to form a new command, NAMRU-Dayton. The new Navy building, housing the Aeromedical Research Directorate and Command Headquarters, encompasses 38,000 sq. ft., several one-of-a-kind, human vestibular and acceleration research devices, and a collection of human performance, cognitive, and aviation medicine laboratories unmatched across the Department of Defense (DoD). The complex continues the tradition of the military's

dedication to the protection of flight crew and pilots and furthering aerospace medicine.

These unique capabilities, combined with the environmental health effects basic research focus, position the laboratory to become one of the premier research facilities for Navy Medicine, other Services, and the DoD.

## Naval Aviation Psychology Represented at 2011 International Symposium on Aviation Psychology

By Dr. Richard Arnold

Since the earliest years of aviation medical research, issues of pilot and aircrew performance have been successfully addressed through aviation psychological research. For Naval Aviation the principal laboratory performing this research has been the Naval Aerospace Medical Research Laboratory (NAMRL) - and its antecedent laboratories - at Naval Air Station Pensacola. With NAMRL's move to Dayton, Ohio this year, naval aeromedical research moves north to become the aeromedical directorate of Naval Medical Research Unit - Dayton (NAMRU-D), joining forces with the Air Force's Aeromedical and Human Performance laboratories in the newly constructed Harry G. Armstrong Complex at Wright-Patterson Air Force Base.

In May 2011 four NAMRU-D and NAMRL scientists announced the arrival of Naval Aviation in Dayton at the 2011 International Symposium on Aviation Psychology, hosted by Wright State University. Drs. Fred Patterson, Jeff Phillips, Joe Chandler, and Rick Arnold presented a panel discussion on "Psychological Aspects of Naval Aeromedical Research," showcasing psychological research conducted at NAMRL over the past seven decades, and also highlighting



Above: Dr. Joe Chandler describes his recent research on individual differences in fatigue susceptibility  
Below: Dr. Fred Patterson discusses aviation spatial orientation



current research transitioning to Dayton this year.

Dr. Arnold presented a historical overview of psychological research at Pensacola. Much of the early research in this area involved pilot selection testing. This history was described, followed by a presentation of recent work involving computerized testing, performance-based testing, and selection in other operational communities, such as amphibious operations and unmanned air vehicles. Dr. Phillips' presentation described recent research on the effects of hypoxia on cognition and the recovery of cognitive function after hypoxia, which it turns out, is slower than physiological recovery of blood oxygen levels. Dr. Chandler then described recent NAMRL research identifying individual differences in susceptibility to the effects of sleep loss, a matter of great concern not just in Naval Aviation, but in many operational environments. Dr. Patterson concluded the panel session with a presentation on groundbreaking new developments in the understanding of pilot spatial disorientation. The panel session was well attended and well received by an audience of local, national, and international aviation psychologists, a fitting introduction for the new Navy aeromedical lab in Dayton.

## NAMRU-D Aeromedical and Toxicology Research Showcased at the 2nd Annual Navy Medicine R&D Conference

By Dr. Jeffrey Phillips

The second annual Navy Medicine Research & Development (NMR&D) Conference was held at the Uniformed Services University of the Health Sciences in Bethesda, Maryland 4-7 June. This year Naval Medical Research Unit-Dayton (NAMRU-D) and Naval Aerospace Medical Research Laboratory (NAMRL) were heavily represented, contributing three scientific presentations and five posters to the meeting.

Dr. Jeffrey Phillips delivered a presentation focused on individual differences in the susceptibility to fatigue. The talk highlighted the importance of considering individual differences when developing prediction models for the negative effects of sleep deprivation on task performance. Dr. Mike Gargas presented preliminary data from an ongoing project on the effects of the submarine environment on reproduction and development. Dr. Gargas' presentation focused on issues that may affect women who serve on nuclear submarines. The project is currently underway and is

addressing key questions related to submarine environments and submariner health. LT Pedro Ortiz gave a presentation on the effects of jet fuel exposure on noise-induced hearing loss, specifically concerning the negative synergistic effects of simultaneous exposure to noise and jet fuel on hearing. This joint exposure risk is pervasive in military aviation, a community in which hearing conservation is rightly an issue of great concern.

In addition to oral presentations, a poster session afforded researchers an additional opportunity to showcase their research. Mr. Roy Dory displayed two posters. One described NAMRU-D's Spatial Disorientation Program and the other identified a new generation of oxygen sensors that potentially could be used in in-cockpit hypoxia detection systems. LCDR Hong Gao exhibited a poster addressing the effects of moderate hypoxic exposure on visual perception. Dr. Jeffrey Phillips presented a poster reporting the utility of near-infrared spectroscopy as an in-cockpit hypoxia detection tool.

(Continued on page 5)

## NMR&D Conference (continued from page 4)

Dr. Palur Gunasekar displayed a poster that presented *in vitro* approaches to assess the potential toxicity from exposures to Middle Eastern sand.

NAMRU-D/ NAMRL presentations and posters were well received and engendered interest and discussion from other investigators from across the NMR&D Enterprise, as well as from leaders in Navy Medicine.



LT Pedro Ortiz (above) and Dr. Michael Gargas (left), both NAMRU-D researchers, present at the 2nd Annual Navy Medicine Research Conference.

## NAMRU-D Presentations & Products

- Arnold, R., Chandler, J., Phillips, J., & Patterson, F. (2011, May). *Psychological Aspects of Naval Aeromedical Research*. Panel presentation given at the International Symposium on Aviation Psychology, Dayton, OH.
- Dory, R. (2011, June). *Identification of Next-Generation In-Cockpit Oxygen Sensors to Reduce Hypoxia-Related Casualties*. Poster presented at the 2<sup>nd</sup> Annual Navy Medicine Research Conference, USUHS, Bethesda, MD.
- Dory, R., Simmons, R., & Arnold, R. (2011, June). *Aviation casualty prevention through applied spatial disorientation research*. Poster presented at the 2<sup>nd</sup> Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Gargas, M. (2011, April). *Submariner health: Assessing reproductive and developmental risks*. Presentation given at the Toxicology Risk Assessment Conference, Cincinnati, OH.
- Gargas, M. (2011, June). *Submariner health: Experimental evaluation of exposure limits for key inhaled compounds*. Presentation given at the 75<sup>th</sup> National Environmental Health Association Annual Education Conference & Exhibition, Columbus, OH.
- Gargas, M., Sweeney, L., & Erickson, R. (2011, June). *Submariner health: Experimental evaluation of exposure limits for key inhaled compounds*. Presentation given at the 2<sup>nd</sup> Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Hardt, D. (2011, April). *Health risk assessment of "Burn Pit" emissions*. Presentation given at the Toxicology Risk Assessment Conference, Cincinnati, OH.
- Mumy, K. (2011, April). *Lung cell exposure to fuel vapors*. Presentation given at the Toxicology Risk Assessment Conference, Cincinnati, OH.
- Ortiz, P. (2011, June). *Evaluation of jet fuel induced hearing loss in rats (*Rattus norvegicus*)*. Presentation given at the 75<sup>th</sup> National Environmental Health Association Annual Education Conference & Exhibition, Columbus, OH.
- Ortiz, P., Fechter, L., Fisher, J., Mokashi, V., Reboulet, J., Stubbs, J., ... Mattie, D. (2011, June). *The potential effect of jet fuel exposure on noise induced hearing loss*. Presentation given at the 2<sup>nd</sup> Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Prabhakaran, K., Gunasekar, P., & Stockelman, M. (2011, June). *Use of microarray to examine neurotoxic potential of Middle Eastern sand: Relevance to exposed U.S. military troops*. Poster presented at the 2<sup>nd</sup> Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Sweeney, L. (2011, April). *PBPK modeling of reproductive and developmental toxicants in risk assessment*. Presentation given at the Toxicology Risk Assessment Conference, Cincinnati, OH.





## NAVAL AEROSPACE MEDICAL RESEARCH LABORATORY NAMRL



**NAMRL MISSION:** To conduct research, development, test, and evaluation in aerospace medicine and related sciences to enhance the health, safety and operational readiness of navy, marine corps, and other military personnel.

**Officer in Charge, Acting: LCDR Robert Higgins**

**Pensacola, FL**

### NAMRU-D and NAMRL Scientists Participate at the Aerospace Medical Association 82nd Annual Meeting

By LCDR Hong Gao &  
Dr. Joseph F. Chandler

The Aerospace Medical Association (AsMA) held its 82<sup>nd</sup> Annual Meeting in Anchorage, AK in May 2011, bringing together clinicians and researchers from around the world to present and discuss the latest advancements in aerospace medicine. The Naval Medical Research Unit-Dayton (NAMRU-D) and Naval Aerospace Medical Research Laboratory (NAMRL) represented the Navy's cutting-edge aeromedical work, showcasing six presentations. The work included a review of pharmacological countermeasures for motion sickness; new insight into the effects of hypoxia on cognitive function; using pupillometry as an investigative tool in the aeromedical sciences; exploring the relationship between resilience and health status; the potential for in-cockpit hypoxia monitoring with modern sensors; and the use of DHEA (dehydroepiandrosterone) supplementation as a protective agent in high stress military operations.

These presentations were well received, and NAMRU-D / NAMRL scientists were among those being recognized by their peers. This year's Michael G. Lillienthal Leadership Award went to Dr. Richard Arnold, former NAMRL Scientific Director and currently Aeromedical Research Director at NAMRU-D, in recognition of his significant contribution to the field of Aero-

space Experimental Psychology through excellence in leadership over the past year. LCDR Hong Gao was named as the runner-up among 175 contestants in this year's Space Medicine Association Jeff Myers Young Investigator Award competition for her work investigating the use of pupillometry as a potent physiologic marker in several aerospace research applications. Lastly, CAPT Keith Syring, Commanding Officer, NAMRU-D was awarded the Aerospace Physiology Community "Special Recognition Award" for his significant contributions and excellence in service to the Aerospace Physiology community for over 20 years. CAPT Syring was recognized for his consistent outstanding performance and exemplary leadership during his tenure as an aerospace physiologist and his measurable contributions in the field of aerospace physiology, survival training, and aviation life support systems.

Each year, AsMA also hosts the U.S. Navy Aerospace Medicine Leaders Group and the United States Navy Luncheon. These events are designed to address and develop a strategic plan for the next year



Dr. Richard Arnold, Aeromedical Research Director at NAMRU-D, received the Michael G. Lillienthal Leadership Award at the 2011 U.S. Navy Luncheon and Meeting at Aerospace Medical Association 82nd Annual Meeting

and to open a dialog among the Navy aeromedical communities. NAMRU-D Executive Officer, CDR Rita Simmons and LCDR Gao were among the group of Naval Aerospace community leaders to attend the meetings. Active involvement in the aeromedical strategic leadership highlights the mission focus to serve the fleet and broader aviation communities.

NAMRU-D and NAMRL continue to demonstrate a high standard of leadership and research scholarship, even during the height of the BRAC transition to Wright-Patterson Air Force Base.

### NAMRL Presentations & Products

- Arnold, R. D., & Guest, M. (2011, May). Identification of multi-UAS operator and crew skill and ability requirements. Poster presented at the Aerospace Medical Association 82<sup>st</sup> Annual Scientific Meeting, Anchorage, AK.
- Chandler, J. F., Arnold, R. D., Phillips, J. B., Dodson, N. S., Horning, D. S., & Turnmire, A. E. (2011, June). *Predicting individual fatigue resistance: Implications for casualty prevention through optimized crew scheduling*. Poster presented at the 2nd Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Chandler, J. F., Simmons, R. G., & Schmitz, T. M. (2011, May). Pharmacological countermeasures for motion sickness: State of the science in the 21<sup>st</sup> century. Poster presented at the Aerospace Medical Association 82<sup>st</sup> Annual Scientific Meeting, Anchorage, AK.

(Continued on page 7)

## Secretary of the Navy

### Awards Meritorious Unit Commendation to NAMRL

By CDR Rita Simmons

As the Naval Aerospace Medical Research Laboratory (NAMRL) closes the book on its 70-plus year history in Pensacola, the laboratory's scientific resurgence and push to maintain mission execution during a tumultuous period of reorganization and relocation to Ohio continues to be widely recognized. Fittingly, in June 2011 NAMRL was awarded the Meritorious Unit Commendation (MUC) by the Secretary of the Navy for consistently demonstrating meritorious achievements above and beyond mission requirements from 1 April 2007 to 1 April 2010. The MUC is awarded to units whose accomplishments and achievements set it apart from other units performing similar services and is comparable to the individual Bronze Star award. NAMRL distinguished itself by executing and delivering award winning products to the fleet and maintaining high levels of research quality and productivity during the Base Realignment and Closure (BRAC) relocation from NAS Pensacola, FL to Wright-Patterson Air Force Base in Dayton, OH. While many units facing BRAC intentionally scale down work volume or cease operations entirely, NAMRL improved scientific productivity by eight-fold, significantly increased sponsorship and research funding, and transitioned five innovative scientific products to the Fleet. In addition to setting itself apart through excellence in research and development, NAMRL personnel prepared for the BRAC transition managing the complex logistics associated with physically moving the laboratory over 750 miles. NAMRL personnel and leadership successfully oversaw the design and construction of a \$13 million MILCON (military construction) and assumed the role of technical lead for the design-build of two novel research devices, one of which was a \$19 million, one-of-a-kind Disorientation Research Device that will be a cornerstone of Navy Medicine's aeromedical research program. Although one of

the smallest laboratories in the Navy Medicine Research & Development Enterprise, NAMRL was recognized by several federal, national, and international organizations for producing outstanding research with six awards bestowed, including two Federal Laboratory Consortium awards for Technology Transfer, the only laboratory in the Enterprise to ever receive this honor. NAMRL leadership instilled a culture of service, resulting in a heightened commitment to its mission to directly impact warfighter readiness and Fleet survivability with relevant operational products. The award is a testament to the distinctive accomplishments, unrelenting perseverance, and unfailing devotion to duty displayed by the officers and staff of NAMRL, and represents the culture of excellence that will continue at Naval Medical Research Unit-Dayton.



NAMRL Staff October 2010

### NAMRL Presentations & Products (continued from page 6)

- Dory, R. E., Simmons, R. G., Horning, D. S., Phillips, J. B., & Chandler, J. F. (2011, May). Response characteristics of oxyhemoglobin saturation sensors during rapid onset altitude exposure: Potential for in-cockpit hypoxia monitoring. Presentation at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.
- Gao, H. (2011, June). *Effect of acute hypoxia on visual performance: A literature review*. Poster presented at the 2nd Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Gao, H., Taylor, M. K., & Horning, D. S. (2011, May). Pupillometry as an investigative tool in the aeromedical sciences: Mechanistic pathways and methodological considerations. Poster presented at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.
- Phillips, J. B., Chandler, J. F., & Horning, D. S. (2011, June). *Monitoring cortical hypoxia using near-infrared spectroscopy: Research and application for aviation mishap prevention*. Poster presented at the 2nd Annual Navy Medicine Research Conference, Uniformed Services University of the Health Sciences, Bethesda, MD.
- Phillips, J. B., Simmons, R. G., Horning, D. S., & Kotch, R. A. (2011, May). Effects of moderate normobaric hypoxia on cognitive function. Poster presented at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.
- Simmons, R. G., Chandler, J. F., & Taylor, D. L. (2011, May). Recent developments in the theoretical mechanisms of action of scopalamine: A systematic review. Poster presented at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.
- Taylor, M. K. (2011, May). Relationships between resilience and health status in military personnel, Part II: Extension of previous report. Poster presented at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.
- Taylor, M. K. (2011, May). The neuroactive steroids dehydroepiandrosterone and dehydroepiandrosterone sulfate: Anabolic, neuroprotective and neuroexcitatory effects. Poster presented at the Aerospace Medical Association 82<sup>nd</sup> Annual Scientific Meeting, Anchorage, AK.

## Commanding Officer's Corner

By CAPT Keith Syring

On the first of June we celebrated the ribbon cutting ceremony for the official opening of the 711<sup>th</sup> Human Performance Wing's Major General Harry G. Armstrong Complex, home to Naval Medical Research Unit- Dayton (NAMRU-D). During the ceremony I could not help but think about all that had been accomplished in such a brief amount of time. Just eight months ago we stood up a new command. With about 30 employees at the time, I realized we had an enormous challenge ahead of us. We had to move into a new building- not yet completed, acquire lab equipment, obtain and assemble several new, large, and complex research devices, grow the staff to support the functions of a command, and integrate the missions and functions of two disparate, highly specialized research labs. The end product seemed unattainable with a deadline only eight months away.

However, with a strong team effort and dedicated staff, we not only met our goals but surpassed them. Labs were fully outfitted and functional, and two of our three large research devices were received and assembled, and are now fully functional. The third and largest device is currently under construction and still on schedule for completion at the end of this year. Building 851, housing the Aeromedical Directorate (formerly NAMRL) and Command Suite, was completed. The personnel number has almost doubled to 57 employees. What once seemed almost unimaginable has now become a reality. The former Environmental Health Effects Laboratory and Naval Aerospace Medical Research Laboratory have been fully integrated into one functioning – and rapidly growing – command.

The ribbon cutting for NAMRU-D and the Armstrong Complex marked the end of our transitional phase and the beginning of a new era in Defense aeromedical, biomedical, and human performance research. We look forward to the new research partnerships and collaborations we'll forge, across disciplines within NAMRU-D, with our Air Force partners at Wright-Patt, with the many outstanding academic and commercial research organizations in the Dayton region, and beyond. Ultimately our new command organization, facilities, and location will enable us to better provide our fleet customers research-based answers to current and future aeromedical, toxicological, and human performance problems.



Captain Keith Syring, USN  
Commanding Officer

## Taking the Helm of Navy Medicine's Aeromedical & Environmental Health Research



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